해외석학 특별강연

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장소_ **라한셀렉트 경주 지하1층 컨벤션B**

프로그램

시 간	발표주제	발표자(소속)
14:30~15:20	6G NTN Beyond Acronyms: Charting a Coherent Path with ISAC, RIS, and AI	Symeon Chatzinotas (University of Luxembourg)
15:20~15:50	Integrated Sensing and Communication: OFDM-based Approaches*	Jinho Choi (University of Adelaide)

*두번째 발표는 재외한인 해외석학 특별강연으로 한국어 현장강의로 진행됩니다.

강연 소개

6G NTN Beyond Acronyms: Charting a Coherent Path with ISAC, RIS, and AI

Prof. Symeon Chatzinotas

University of Luxembourg

Symeon Chatzinotas (MEng, MSc, PhD, FIEEE) is currently Full Professor / Chief Scientist I and Head of the research group SIGCOM in the Interdisciplinary Centre for Security, Reliability and Trust, University of Luxembourg. In parallel, he is an Adjunct Professor in the Department of Electronic Systems, Norwegian University of Science and Technology, an Eminent Scholar of the Kyung Hee University, Korea and a Collaborating Scholar of the Institute of Informatics & Telecommunications, National Center for Scientific Research "Demokritos". In the past, he has been a Visiting Professor at EPFL, Switzerland and University of Parma, Italy and contributed in numerous R&D projects for the Institute of Telematics and Informatics, Center of Research and Technology Hellas and Mobile Communications Research Group, Center of Communication Systems Research, University of Surrey. He has received the M.Eng. in Telecommunications from Aristotle University of Thessaloniki, Greece and the M.Sc. and Ph.D. in Electronic Engineering from University of Surrey, UK in 2003, 2006 and 2009 respectively. He has authored more than 800 technical papers in refereed international journals, conferences and scientific books and has received numerous awards and recognitions, including the IEEE Fellowship and an IEEE Distinguished Contributions Award. He has served in the editorial board of npj Wireless Technology, IEEE Transactions on Communications, IEEE Open Journal of Vehicular Technology and the International Journal of Satellite Communications and Networking.

6G has been plagued with a variety of acronyms, some referring to new use cases while others to novel technological enablers. As the 6G development timeline reaches its half-life, it is still unclear which acronym combinations make sense in the real world. This talk aims to clarify which technological enablers can be most impactful for NTN, enumerating the top contenders AI, RIS and ISAC. These combinations are critically approached based on the limitations and potential of satellite systems. Subsequently, their applicability and performance are demonstrated through selected research from the SIGCOM group. Finally, a list of open research topics and future vision are proposed.

Integrated Sensing and Communication: OFDM-based Approaches

Prof. Jinho Choi

University of Adelaide

Jinho Choi was born in Seoul, Korea. He received B.E. (magna cum laude) degree in electronics engineering in 1989 from Sogang University, Seoul, and M.S.E. and Ph.D. degrees in electrical engineering from Korea Advanced Institute of Science and Technology (KAIST) in 1991 and 1994, respectively. He is with the School of Electrical and Mechanical Engineering, the University of Adelaide, Australia, as a Professor. His research interests include the Internet of Things (IoT), wireless communications, and statistical signal processing. He authored two books published by Cambridge University Press in 2006 and 2010 and one book by Wiley-IEEE in 2022. Prof. Choi received a number of best paper awards including the 1999 Best Paper Award for Signal Processing from EURASIP. He is a Fellow of the IEEE and has been on the list of World's Top 2% Scientists by Stanford University since 2020. Currently, he is a Senior Editor of IEEE Wireless Communications Letters and an Associate Editor of IEEE Trans. Mobile Computing. He has also served as a Division Editor of Journal of Communications and Networks (JCN), an Associate Editor or Editor of other journals including IEEE Trans. Communications, IEEE Communications Letters, JCN, IEEE Trans. Vehicular Technology, and ETRI journal.

This talk explores the emerging paradigm of Integrated Sensing and Communication (ISAC), where base stations are designed to jointly perform wireless communication and environmental sensing. By sharing hardware and radio spectrum, ISAC improves spectral efficiency and enables advanced services in future wireless systems. We focus on orthogonal frequency division multiplexing (OFDM), the waveform widely adopted in 5G and beyond, and demonstrate how its structure can be leveraged for sensing. In particular, we show how reflected OFDM signals can be used to estimate delay and Doppler parameters for detecting and tracking moving objects. Conventional methods such as the periodogram are discussed, along with their limitations in resolution. To address these challenges, we introduce high-resolution techniques, e.g., subspace-based methods, which enable finer target discrimination in complex environments.